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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,160	07/23/2003	Yong-Chan Keh	5000-1-397	7995
33942	7590	09/08/2005	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/625,160

Applicant(s)

KEH ET AL.

Examiner

Omar Rojas

Art Unit

2874

PM

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-8, and 12 is/are rejected.
- 7) ☒ Claim(s) 6 and 9-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Response to Amendment***

1. With regards to the amendment filed on June 20, 2005, all the requested changes to the claims have been entered. Claims 1-12 are pending.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1, 5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 4,686,678 to Ohta et al. ("Ohta", previously of record) in view of Patent No. 5,694,048 to Boudreau et al. ("Boudreau").**

Regarding claim 1, Ohta discloses an optical module comprising:

- a stem (1 and/or 13);
- a silicon optical bench (101) disposed on the stem,
- a laser diode (2) disposed in/on the silicon bench (101);
- a photo diode (102) disposed in/on the stem, the photo diode (102) converts light received from the laser diode into current (col. 4, lines 25-30);
- and a plurality of leads (15-17) coupled to the stem. See Figure 1 of Ohta reproduced below.

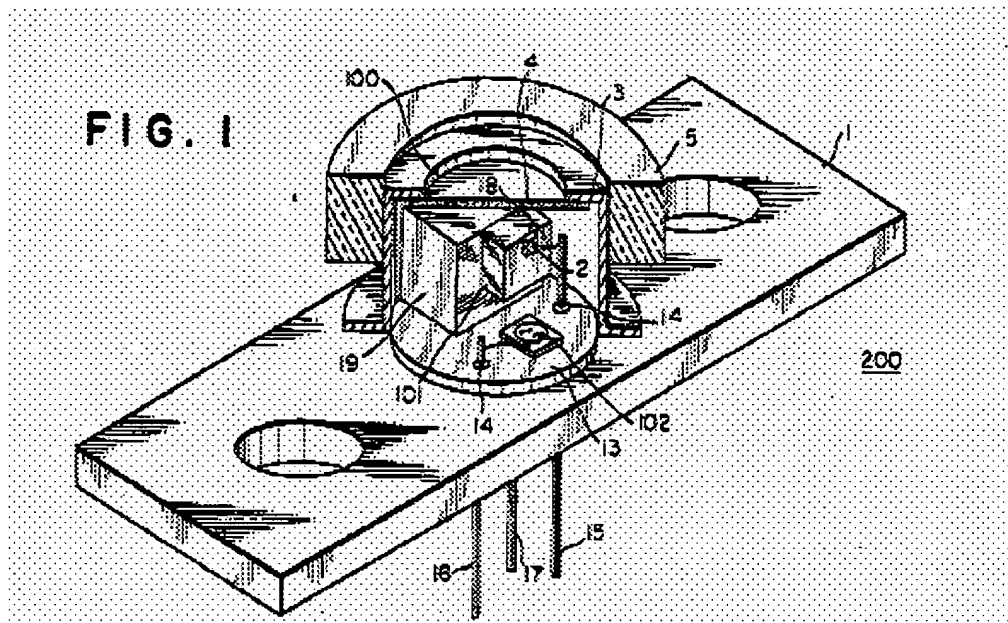


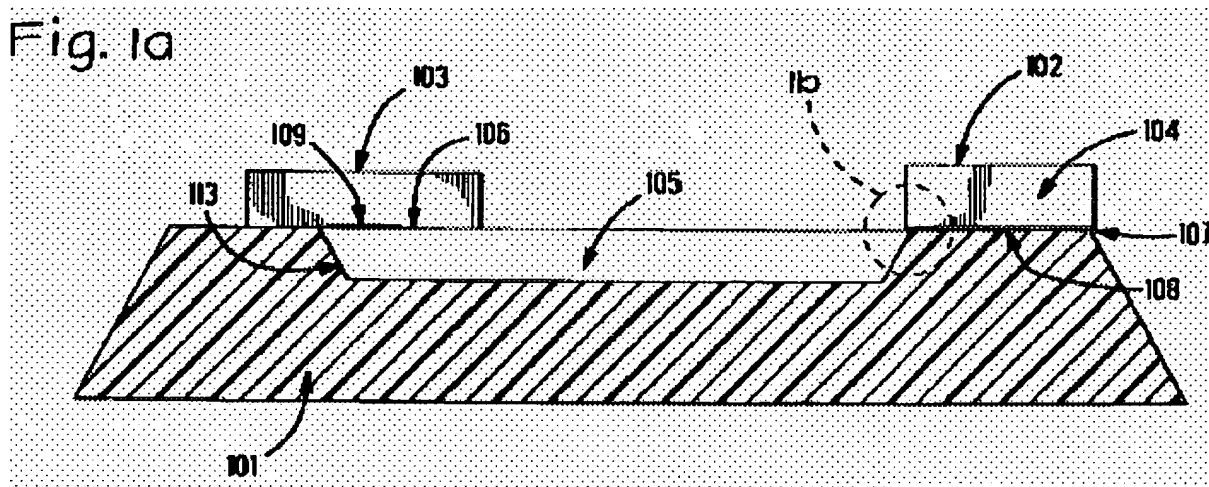
Figure 1 of Ohta.

Thus, Ohta only differs from claim 1 in that Ohta does not teach:

- The laser diode disposed over a V-groove and
- the photodiode monitors photo-current level using light reflected from the V-groove.

Boudreau, however, teaches both of these limitations. As seen in Figure 1a of Boudreau, a laser diode 102 is disposed over a V-groove 105 and a photodiode 103 monitors photo-current level using light reflected from the V-groove. See Boudreau at col. 2, lines 15-27. Figure 1a of Boudreau is reproduced below.

Fig. 1a



The advantage of Boudreau is in having “a monitor-detector and laser subassembly ready for mounting in an optical assembly having been burn-in tested thereby increasing production yield.” Boudreau at col. 1, lines 58-62.

Therefore, the invention of claim 1 would have been obvious to one of ordinary skill in the art at the time of the claimed invention in view of Ohta combined with Boudreau.

Regarding claim 5, Ohta further differs in that Ohta does not teach bonding his photodiode (102) to the same silicon bench (101) as the laser diode. Boudreau, on the other hand, also teaches these features (see Figure 1a, above). Thus, when Boudreau is combined with Ohta, claim 5 is also considered obvious for the same reasons mentioned with respect to claim 1.

Regarding claim 12, the previous remarks concerning claim 1 are incorporated herein. Thus, Ohta combined with Boudreau further differs from claim 12 in that ceramic feed-throughs are not disclosed by either reference. It would have been an obvious matter of design choice to use

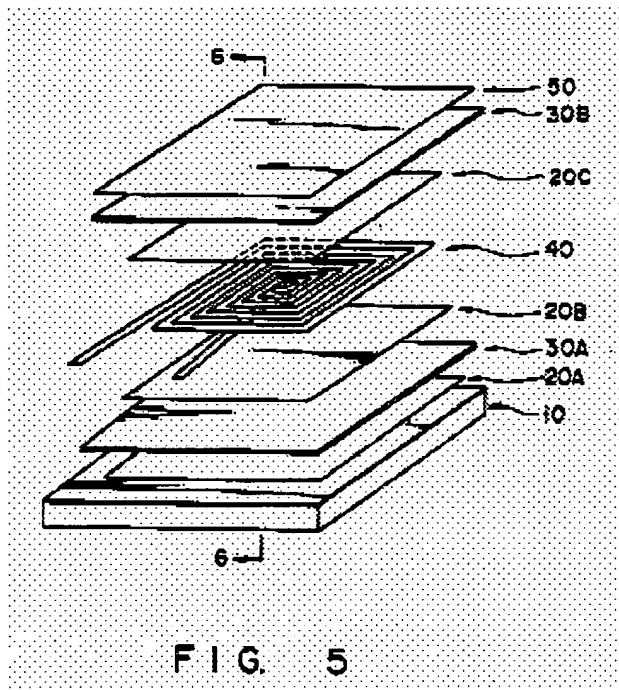
Art Unit: 2874

ceramic feed-throughs instead of leads since applicant(s) have not disclosed that using ceramic feed-throughs solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with leads. Therefore, because no perceived criticality is disclosed for the substitution of ceramic feed-throughs for leads, claim 12 is also considered unpatentable over Ohta in view of Boudreau.

**5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta in view of Boudreau as applied to claim 1 above, and further in view of Patent No. 6,404,317 to Mizoguchi et al. ("Mizoguchi", previously of record).**

Regarding claims 2-3, the previous remarks concerning claim 1 are incorporated herein. Ohta in view of Boudreau differ from claims 2-3 in that a spiral type thin-film inductor choke is not disclosed as being disposed on the silicon optical bench and connected to the laser diode.

Mizoguchi, however, teaches a spiral type thin film inductor choke coil (40) disposed on a silicon substrate (10). See Figure 5 of Mizoguchi reproduced below.



The inductor coil (40) of Mizoguchi is desirable to use as a DC-DC power converter and for miniaturization of electronic devices. See Mizoguchi at column 5, lines 47-52 and column 6, lines 23-27.

Therefore, it would have been obvious to one of ordinary skill in the art to obtain the invention of claims 2-3 by combining Mizoguchi's spiral thin-film inductor choke coil with Ohta in view Boudreau.

6. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta in view of Boudreau as applied to claim 1 above, and further in view of Patent No. 6,859,470 to Fu et al. ("Fu", previously of record).**

Art Unit: 2874

Regarding claim 4, the previous remarks concerning claim 1 are incorporated herein. Ohta in view of Boudreau differ from claim 4 in that an RF matching resistor is not disclosed as being disposed on the silicon optical bench and electrically connected to the laser diode.

Fu, however, teaches disposing an RF matching resistor (1124) on a silicon optical bench (1108) and electrically connecting it to the laser diode (1102). See Fu at column 24, lines 14-28.

The ordinary skilled artisan would have desired to combine Fu's disclosure with Ohta in view of Boudreau in order to create a matched circuit with the laser. See Fu at column 23, lines 16-19.

Therefore, it would have been obvious to one of ordinary skill in the art to obtain the invention of claim 4 by combining Fu's RF matching resistor with Ohta in view of Boudreau.

**7. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta in view of Boudreau as applied to claim 1 above, and further in view of Patent No. 3,959,765 to Stewart ("Stewart", previously of record).**

Regarding claims 7-8, the previous remarks concerning claim 1 are incorporated herein. Ohta in view of Boudreau differ from claims 7-8 in that a borosilicate glass seal powder is not disclosed as bonding the leads.



Art Unit: 2874

Stewart, however, teaches using a borosilicate glass seal powder (98, 100) for bonding electrical leads (82, 94). See Stewart at column 8, lines 49-57.

The ordinary skilled artisan would have desired to combine Stewart's disclosure with Ohta in view of Boudreau in order to securely bond the electrical leads to the stem.

Therefore, it would have been obvious to one of ordinary skill in the art to obtain the invention of claims 7-8 by combining Stewart's glass seal powder with Ohta in view of Boudreau.

***Allowable Subject Matter***

9. Claims 6 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, by bonding the leads directly to the silicon optical bench, applicants disclose that inductances can be reduced. Therefore, this limitation is considered patentable since there is no suggestion in the prior art of record for bonding a plurality of the leads to the silicon bench. Regarding claims 9-11, fourth and fifth leads connected with an anode and cathode of the photodiode, respectively, are not disclosed by any of the prior art of record. The inclusion of these limitations are considered novel and unobvious in view of the prior art of record.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2874

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or

August 24, 2005



**AKM ENAYET ULLAH**  
**PRIMARY EXAMINER**